

WE CLAIM:

1. An intracorporal device comprising:
 - a) a helically wound coil having a plurality of windings forming a coil length;
 - b) a thermoplastic polymer sleeve disposed about a portion of the coil length; and
 - c) a plurality of discrete affixation points disposed along the coil length, wherein each discrete affixation point fixes the thermoplastic polymer sleeve to two or more coil windings.
2. The intracorporal device according to claim 1, wherein the plurality of discrete affixation points includes 10 discrete affixation points disposed along the coil length.
3. The intracorporal device according to claim 1, wherein the plurality of discrete affixation points form a non-uniform pattern along the coil length.
4. The intracorporal device according to claim 3, wherein the plurality of discrete affixation points has a density of discrete affixation points per unit length of coil that decreases along the coil length.
5. The intracorporal device according to claim 1, wherein the plurality of discrete affixation points form a uniform pattern along the coil length.
6. The intracorporal device according to claim 1, wherein each discrete affixation point fixes 3 to 10 coil windings to the thermoplastic sleeve.
7. The intracorporal device according to claim 1, wherein each discrete affixation point is a discrete element aligned orthogonal to the windings.

8. The intracorporal device according to claim 1, wherein each discrete affixation point is a element having a width of 0.1 to 0.5 mm and a length of 0.1 to 0.3 mm.

9. An intracorporal device comprising:

- a) a helically wound coil having a plurality of windings having an outer perimeter and forming a coil length;
- b) a thermoplastic polymer sleeve circumferentially disposed about a portion of the coil length; and
- c) a plurality of discrete affixation points disposed on only a portion of the outer perimeter and along the coil length, wherein each discrete affixation point fixes the thermoplastic polymer sleeve to two or more coil windings.

10. The intracorporal device according to claim 9, wherein the plurality of discrete affixation points includes 10 discrete affixation points disposed along the coil length.

11. The intracorporal device according to claim 9, wherein the plurality of discrete affixation points form a non-uniform pattern along the coil length.

12. The intracorporal device according to claim 11, wherein the plurality of discrete affixation points has a density of discrete affixation points per unit length of coil that decreases along the coil length.

13. The intracorporal device according to claim 9, wherein the plurality of discrete affixation points form a uniform pattern along the coil length.

14. The intracorporal device according to claim 9, wherein each discrete affixation point fixes 3 to 20 coil windings to the thermoplastic sleeve.

15. The intracorporal device according to claim 9, wherein each discrete affixation point is a discrete element aligned orthogonal to the windings.

16. The intracorporal device according to claim 9, wherein each discrete affixation point is a element having a width of 0.1 to 0.5 mm and a length of 0.1 to 0.3 mm.

17. A medical device comprising:

- a) an elongate shaft;
- b) a helically wound coil having a plurality of windings forming a coil length disposed about a portion of the elongate shaft;
- c) a thermoplastic polymer sleeve circumferentially disposed about a portion of the coil length; and
- d) a plurality of discrete affixation points disposed along the coil length, wherein each discrete affixation point fixes the thermoplastic polymer sleeve to two or more coil windings.

18. The medical device according to claim 17, wherein the plurality of discrete affixation points includes 10 discrete affixation points disposed along the coil length.

19. The medical device according to claim 17, wherein the plurality of discrete affixation points form a non-uniform pattern along the coil length.

20. The medical device according to claim 19, wherein the plurality of discrete affixation points has a density of discrete affixation points per unit length of coil that decreases along the coil length.

21. The medical device according to claim 17, wherein the plurality of discrete affixation points form a uniform pattern along the coil length.

22. The medical device according to claim 17, wherein each discrete affixation point fixes 3 to 10 coil windings to the thermoplastic sleeve.

23. The medical device according to claim 17, wherein each discrete affixation point is a discrete element aligned orthogonal to the windings.

24. The medical device according to claim 17, wherein each discrete affixation point is an element having a width of 0.1 to 0.5 mm and a length of 0.1 to 0.3 mm.

25. A guidewire comprising:

- a) an elongate shaft having a proximal end and an opposing distal end;
- b) a helically wound coil having a plurality of windings forming a coil length disposed about a portion of the distal end;
- c) a thermoplastic polymer sleeve circumferentially disposed about a portion of the coil length; and
- d) a plurality of discrete affixation points disposed along the coil length, wherein each discrete affixation point fixes the thermoplastic polymer sleeve to two or more coil windings.

26. The guidewire according to claim 25, wherein a plurality of discrete affixation points includes 10 discrete affixation points disposed along the coil length.

27. The guidewire according to claim 25, wherein the plurality of discrete affixation points form a non-uniform pattern along the coil length.

28. The guidewire according to claim 27, wherein the plurality of discrete affixation points has a density of discrete affixation points per unit length that decreases along the coil length.

29. The guidewire according to claim 25, wherein the plurality of discrete affixation points form a uniform pattern along the coil length.

30. The guidewire according to claim 25, wherein the discrete affixation point fixes 3 to 10 coil windings to the thermoplastic sleeve.

31. The guidewire according to claim 25, wherein each discrete affixation point is a discrete element aligned orthogonal to the windings.

32. The guidewire according to claim 25, wherein each discrete affixation point is an element having a width of 0.1 to 0.5 mm and a length of 0.1 to 0.3 mm.

33. The guidewire according to claim 28, wherein the thermoplastic polymer sleeve has a proximal end and a distal end and where the density of discrete affixation points per unit length decreases from the proximal end to the distal end.

34. A process for forming and intracorporal device comprising;

- a) disposing a thermoplastic polymer sleeve circumferentially disposed about a portion of a helically wound coil having a plurality of windings forming a coil length; and
- b) forming a plurality of discrete affixation points along the coil length, wherein each discrete affixation point fixes the thermoplastic polymer sleeve to two or more coil windings.

35. The process according to claim 34, wherein the forming a plurality of discrete affixation points comprises thermal energy.

36. The process according to claim 34, wherein the forming a plurality of discrete affixation points comprises laser welding.

37. The process according to claim 34, wherein the forming a plurality of discrete affixation points comprises laser diode welding.

38. The process according to claim 34, wherein the forming a plurality of discrete affixation points includes forming 10 elements disposed along the coil length.

39. The process according to claim 34, wherein the forming a plurality of discrete affixation points includes forming a non-uniform pattern of discrete affixation points along the coil length.

40. The process according to claim 39, wherein the forming a plurality of discrete affixation points includes forming a plurality of discrete affixation points having a density of discrete affixation points per unit coil length that decreases along the coil length.

41. The process according to claim 34, wherein the forming a plurality of discrete affixation points includes forming a uniform pattern of discrete affixation points along the coil length.

42. The process according to claim 34, wherein the forming a plurality of joining elements includes coupling 3 to 10 coil windings.

43. The process according to claim 34, wherein the forming a plurality of discrete affixation points includes forming discrete affixation points aligned orthogonal to the windings.

44. The process according to claim 34, wherein the forming a plurality of discrete affixation points includes forming discrete affixation elements having a width of 0.1 to 0.5 mm and a length of 0.1 to 0.3 mm.

45. The process according to claim 34, wherein the forming a plurality of discrete affixation points includes forming discrete affixation elements by preferentially heating the thermoplastic polymeric sleeve at discrete points sufficient to flow thermoplastic polymer around two or more windings at each discrete affixation point.

46. A product produced by the process of claim 34.